IN THE CLAIMS:

1. (cancelled) A purified and isolated DNA molecule consisting essentially of the nucleotide sequence set forth in SEQ ID NO:1, or its complementary strand.

2. (cancelled) The purified and isolated DNA molecule of Claim 1, wherein said DNA molecule encodes for a purified and isolated protein molecule consisting essentially of the amino acid sequence set forth in SEQ ID NO:2.

3. (currently amended) A live, attenuated strain of *V.anguillarum* which comprises:

a ~~mutated~~ *mugA* gene comprising nucleotides 1218-2610 of SEQ ID NO:1, ~~the strain characterized in that it is~~ the *mugA* gene being mutated such that the strain is incapable of expressing a functional *mugA* protein.

4. (original) The live, attenuated strain according to claim 3 wherein the strain is incapable of growing in salmon intestinal mucus.

5. (original) The live, attenuated strain according to claim 3 wherein the mutation is non-revertible.

6. (original) The live, attenuated strain according to claim 4 wherein the mutation is an insertion.

7. (original) The live, attenuated strain according to claim 4 wherein the mutation is a deletion.

8. (currently amended) A vaccine strain against *V.anguillarum* infection in an animal selected from the group consisting of fish, bivalves and crustaceans comprising:

a live, attenuated strain of *V.anguillarum*~~, the strain comprised of a mutated *mugA* gene, the strain characterized in that it is incapable of expressing a functional *mugA* protein~~ which comprises a *mugA* gene comprising nucleotides 1218-2610 of SEQ ID NO:1, the *mugA* gene being mutated such that the strain is incapable of expressing a functional *mugA* protein.

9. (original) The vaccine strain according to claim 8 wherein the strain further comprises a pharmaceutically acceptable carrier.

10. (cancelled) The vaccine strain according to claim 8 wherein the animal is a fish.

11. (cancelled) The vaccine strain according to claim 8 wherein the animal is a bivalve.

12. (cancelled) The vaccine strain according to claim 8 wherein the animal is a crustacean.

13. (original) The vaccine strain according to claim 8 wherein the mutation is non-revertible.

14. (original) The vaccine strain according to claim 13 wherein the mutation is an insertion.

15. (original) The vaccine strain according to claim 13 wherein the mutation is a deletion.

16. (currently amended) A method for immunizing an animal selected from the group consisting of fish, bivalves and crustaceans against *V. anguillarum* infection in ~~an~~ the animal which comprises:

administering to the animal a vaccine comprised of a live, attenuated strain of *V.anguillarum*~~, the strain comprised of a mutated *mugA* gene~~ which comprises a ~~mutated~~ *mugA* gene comprising nucleotides 1218-2610 of SEQ ID NO:1, ~~the strain characterized in that it is~~ the *mugA* gene being mutated such that the strain is incapable of expressing a functional *mugA* protein.

~~the strain characterized in that it is incapable of expressing a functional *mugA* protein as a result of the mutation in the *mugA* gene~~.

17. (original) The method according to claim 16 wherein administering comprises immersion.

18. (original) The method according to claim 16 wherein administering comprises intraperitoneal injection.

19. (original) The method according to claim 16 wherein administering comprises oral intubation.

20. (original) The method according to claim 16 wherein administering comprises anal intubation.

21. (original) The method according to claim 16 wherein administering comprising immersing the animal in a medium containing the attenuated strain.

22. (canceled) The method according to claim 16 wherein the animal is a fish.

23. (canceled) The method according to claim 16 wherein the animal is a bivalve.

24. (canceled) The method according to claim 16 wherein the animal is a crustacean.

25. (original) The method according to claim 16 wherein the mutation in the *mugA* gene *is* non-revertible.

26. (original) The method according to claim 25 wherein the mutation in the *mugA* gene is an insertion.

27. (original) The method according to claim 25 wherein the mutation in the *mugA* gene is a deletion.

28. (currently amended) A method of inducing an immune response in an animal selected from the group consisting of fish, bivalves and crustaceans against one or more pathogens which comprises transforming a live, attenuated strain of *V. anguillarum* which comprises a *mugA* gene comprising nucleotides 1218-2610 of SEQ ID NO:1, the *mugA* gene being mutated such that the strain is incapable of expressing a functional *mugA* protein, ~~the strain characterized in that it is incapable of expressing a functional *mugA* protein~~, with a plasmid comprising DNA of interest encoding at least one protein antigen for each of the pathogens and administering the transformed strain to ~~an~~ the animal.

29. (canceled) A method for the detection of the presence of *V. anguillarum* in animal tissue or fluids comprising:

contacting the sample with a detectably labeled DNA probe wherein the probe comprises a detectable single-stranded DNA having a nucleotide sequence which specifically and

selectively hybridizes with DNA of *V. anguillarum*, the DNA probe comprising a nucleotide sequence selected from the group consisting of SEQ ID NO. 1, whereby the presence of the DNA is indicative of a *V. anguillarum* infection.

30. (new) A mutated strain of *V.anguillarum* characterized in that the strain is incapable of growing in salmon intestinal mucous.